Chronic Fatigue Decoded: From Lifestyle to Mitochondria Transcript

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Podcast Introduction and Mission

Your genes hold the answers to your family's overall health. I'm Dr. Paula Kruppstadt, and on the Get to the Root with Hope for Healing podcast, I sit down with experts in genetics, functional medicine, and family care to explore what's really going on beneath the surface so you can stop guessing and start healing.

From personalized insights to practical tools, we bring you whole family wellness that starts at the root. Okay, so one of the most common things that we are seeing in today's society and the questions that we get asked is, why am I always so tired?

Right? And so the question we have is when patients say they're tired all the time, is there some way for us to differentiate like what could genuinely just be normal tiredness and like true fatigue?

Yes, that's a great question. Lifestyle plays a huge factor in this, and I just want to just very briefly talk about that.

Understanding Fatigue and Lifestyle Factors

But how much water are you drinking? I mean, that's number one. If you're not hydrated, you don't move acid out of your cells. Number two, sleep. And we're going to do a whole episode on sleep.

But I think one thing that's really important is going to bed at the same time and getting up at the same time. And if people struggle with sleep, there are things that can help with that.

Let me see here. Also, as far as fatigue goes, we always need to think about infection. So, you know, if people have infections that are leading to that and, you know, things such as dental infections that are chronic, and also viruses because some people have gotten mononucleosis which is Epstein-Barr virus when they were younger and then it gets reactivated and that can happen.

The other thing to remember is that what makes us tired. So we have these things in our body called mitochondria and I think about those seventh and eighth and ninth graders learn about this.

They're the batteries or the powerhouses of ourselves. They make energy called ATP. So if your mitochondria don't work correctly, you can be tired. And then when we think about environment, so if you live in a place that has a profound amount of water damage or overflowed toilets, flood leaks, that kind of a thing, that poisons your mitochondria.

That can just make you uber tired and poor nutrition. if you're not giving your body the things it needs. So one of the big needle movers with fatigue is colors, phytonutrients, that's things from plants.

So there's a lot of lifestyle in this, but there can be biochemical issues leading to fatigue. So I really love what you're breaking down, especially because a lot of the model that we use and a lot of the things that we incorporate are like the health coaches, right?

And so if someone is coming in with fatigue, it seems like a lot of those lifestyle resources and a lot of those lifestyle modifications can be made alongside a health coach to kind of optimize what the body is doing.

And then I really love that you talked about like, now there is this list of other things that are actually going within the body. So it's not just that you're not feeling yourself.

It's not that you're just not sleeping. You're doing all of that and it's still not moving the needle. And so I really love that. And so I'd really love to just like dive in and unpack that.

I think a big question we have though, and I think maybe this is something that a lot of us are prone to do and in a society that's constantly saying give us more and a more achiever society is that why is it so important that we don't just ignore the fact that we're tired?

Like what is important and why is it important for us to pay attention to our fatigue rather than just push through it constantly? The fatigue is your body's way of telling you something is not right, something's out of balance.

And if you push yourself too far, you'll get sucked into this vortex and you won't be able to get out of it. And that's where we don't want to drain our resources.

People talk about adrenal fatigue. Well, our adrenal gland creates hormones that help us to navigate stress. Here's one very, it's not that rare, but Everyone hears about high cholesterol.

Well, there are some people that have low cholesterol, and if they have low cholesterol genetically, that's the raw materials for our adrenal gland to work.

Why Fatigue Should Not Be Ignored

It's actually much more common in children who are not normal neurodevelopmentally. So on the autism spectrum, ADD, ADHD, even though they seem like they have too much energy.

So checking the cholesterol to make sure that it's normal, I would say anything above 130, okay? Okay. And you would never think to check that though, right?

No, not perfectly. And I love the way you said it. You're like, it's not that it's uncommon, it's just that it's not checked. And I think that's really the functional medicine approach is that like, no, it's not an uncommon situation.

People just don't think like, oh, you know what? I'm sleeping. We'll check your cholesterol, right? Like, it's just not you don't put those things together.

So I really love that. The other big thing that people go to is your thyroid gland, because your thyroid gland, it's here in your neck, but it gets its signals from the brain.

In fact, out of the anterior pituitary, there's a hormone called thyroid stimulating hormone. And then that sends signals to the thyroid gland and there's several hormones.

One of them is called free T4 and free T3. And your free T3 is the hormone that crosses into your cells and drives your metabolism. So if your free T3 is low, you could have an iodine deficiency.

So we tend to check that on patients that are 8 and older. You can get 2% Lugol solution that is an iodine solution and put a little quarter on your skin or put like a little two inch by two inch patch on your thigh.

And I just have people put a drop and then turn the dropper on its side. It's glass. Do that, then pat it and your skin will absorb it. That patch should last 12 to 18 hours.

And if it's gone before that, you're iodine deficient and that could be causing you to be fatigued. So The other things with thyroid is people think about their hair becoming really dry or brittle, their skin being very dry or developing constipation, gaining weight, not losing weight.

So you got to look at that too. So cholesterol, the fuel for the adrenal gland, because that's where your cortisol and your mineralic corticoids are made.

You can also ask your practitioner to check something called pregnenolone. Pregnenolone is a breakdown product of cholesterol, and your cholesterol may be normal, but your pregnenolone may be low, so it should be 60 to 150. So if your body is over-stressed out in your cortisol, cortisol is a stress hormone, so you're stress, stress, stress,

because that's another you know, it's our life.

Thyroid, Cholesterol, and Hormone Clues

If your pregnenolone dips, it can be stolen and made into cortisol. And so we call that the pregnenolone steal. So we check that too. And sometimes just adding the pregnenolone really helps with fatigue and resiliency and the ability to get back on the wagon and go again.

So thyroid and of course, you know, drinking enough water and speaking of that, I'm going to take a sip. Absolutely. Mouth is a little bit dry. And that's what I'm saying.

So we're kind of going all over the place. So what if we start by just saying like, okay, what does water have to do with fatigue? So if you don't drink enough water, whenever your cell carries out a function, you're unable to take the debris out of it.

So think about when you exercise and you build up lactic acid and your muscles ache. If you don't hydrate, then that acid stays there. Your muscles, you're sore, and it's prolonged.

And that leads to fatigue. Well, that's happening at a microscopic level. So start with water to move the acid out of the cells. So parents, family members, if you look at your weight in pounds, you should try to drink half of your body weight in ounces.

a day. So take your weight in pounds. If it's 100, then 50 ounces a day is how much water you would want to be drinking. That's why water is important to decrease Fatigue.

Fatigue. Okay. So another one of the things that you mentioned earlier in the podcast was nutrition and the things that you eat. And I feel like that can feel like a no brainer, but can you maybe talk through some of the more technical reasons of fueling our body and like maybe what we need to fuel it with for someone who is struggling with fatigue?

Okay. So, when we think about phytonutrients, meaning things that come from fruits and vegetables, it's not the quantity of what you eat. It's the variety because these ingredients from various fruits and vegetables, each color does something different, but it fuels different parts of the cell, especially the mitochondria.

I'm thinking for your children, if they're tired, make sure they're getting enough water and be sure they're getting enough rest and you're not running them to too many activities.

Take the pressure off. Why are you doing all these things? Why are you going to soccer and dance and all these other things? It just puts undue pressure.

And it's like, if it's your first kid, you're like, well, our neighbors are doing horseback riding at the Y. We need to do it too. Or what about dance?

I need to do dance. And it's like, all you're doing is stressing yourself out and stressing your child out. So what really matters being present and being with them.

So let's go back to what those things do. So one of the things we'd be happy to give people that send a query to us on the podcast is something called the phytonutrient spectrum.

Hydration and Cellular Energy

It has all these special little things that you can get your kids involved in and making your own recipes at home. So for example, blueberries, red raspberries, a piece of cantaloupe, a pomegranate seed, a piece of tomato.

It's not how much, it's just the variety. And so sometimes because children don't like trying certain things, it's just

offering it because typically in the pediatric population, you need to offer something 12 times before a child will try it.

And if they do it before that, then thank God and move on. But, you know, green things too. Now, you asked about nutrition. So here's another thing. Our mitochondria needs something called carnitine.

And carnitine shuttles fatty acids across the membranes of mitochondria to make them work. So that's where grass-fed beef, wild game, chicken, poultry.

This is where kind of carnivorous food plans work very, very well. Animal proteins, they feel the mitochondria. Also, eggs. I mean, eggs, you know, for the longest time, the American Heart Association said, don't eat eggs.

And it's like, then they came back and said, no, eggs are good for you. And it's like, come on, make up your mind. So, real food. And as parents, we need to be intentional about that because just because a kiddo doesn't like the texture or the taste of it, Maybe you need to get a juicy piece on the inside of a piece of chicken, not that outside that might be dry, and cut it up into a little pencil eraser size.

You know, some kids will eat steak till the cows come home and they may be really little. I'm thinking back to my 26-year-old. She was in a high chair.

Nutrition, Phytonutrients, and Protein Balance

and she knew how to sign and we were giving her little pieces of steak and she was just like more, more, more, you know, just eating, eating, eating. But then you have some kids that snub their nose at it.

Another easy way for parents to try to get nutrient dense meats is it's called the ancestral blend. Whole Foods has something like that but also for example here in Texas we have a grocery store chain called HEB and they have the ancestral blend and they'll take organ meat or they'll take a little liver or a little kidney you know and they will put that and grind it up into Yeah.

And you're getting all these amazing nutrients. For example, the liver, you have ferritin, you have iron, you have B12, you have B9. So those are… And so, yeah, no.

And I really love… Oops, sorry. I really love all of the different things that you're saying. And so what I hear, and maybe you can impact this a little more, what I hear you saying is, the proper nutrients, that if we're not getting those nutrients, then what is our body running on?

Like what is it actually, what is the fuel that we're putting in our body? And maybe you can impact how our body uses those things. Yeah, so if you're not giving yourself enough protein, then you'll start breaking your muscle down, okay?

And if you're a carbaholic and You know, some people are wired not to be able to pull sugar into their cells. And those are people that are hangry and they get upset if they don't eat frequently.

And they want those carbs because it's an immediate glucose hit. But if you don't balance everything, you're going to have this roller coaster and you'll get really, really tired and you'll need more sugar to give you a hit.

And so balancing like fat and protein, you know, avocado, or you take simple mills, almond crackers with a nut butter like almond butter, or a Hebrew national hot dog, let the child eat the Hebrew national clean hot dog, you know.

Right. especially if they already like things like hot dogs, right? So it's a very easy transition over. So the fatigue, if you don't have enough protein in your food plan, then you're going to take all those carbs that you're consuming and make glycogen that's going to build up in the liver.

But then you can develop fatty liver because you're just eating carbs. And then you're going to move toward type 2 diabetes. So what we want to do is have more of a balance.

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That's the premier and proprietary genetic panel that Fagran has allowed us to create. You know, we always talk about genetics and this is what I love because no one person is the same.

So on our Wellness Blueprint, it tells us you do best with this amount of protein, this amount of carbs. and this amount of fat and or these genes impair your ability to break these things down and this is the ratio that you need and also this is the type of exercise you need and it also looks at our mitochondria all those nutrients that we need to make our mitochondria work correctly.

Think about when you're constipated you become very tired It's because you're reabsorbing toxins, and that's part of our mitochondrial function in our gut in addition to how well we detoxify.

So if a person struggles with constipation and fatigue, getting regular so that they expel all those toxins out of their body that can build up and shut things down and poison the mitochondria, we want to get them out of the body.

I really love that you mentioned that. And yeah, if you may even possibly struggle with constipation, there's two episodes that I definitely would check because you also really broke down the signs of constipation that could be missing, right?

And that people could have missed. So I definitely would want to unpack that. I definitely would check that out. But really going in to fatigue and I sleep eight to nine hours a day and it's just still not cutting it, right?

And that's so hard. You're doing like one, congratulations, you're getting eight to nine hours of sleep, but now I'm still constantly fatigued. I know you've touched on the thyroid.

I know you've touched on different things, but you did talk about mitochondria. Would this be a good time to talk about or unpack different things? Yeah, if a person has non-restorative sleep, let's say they sleep a lot, but they never feel like good when they get up and they're still dragging and they need a bunch of caffeine to get going.

Genetics, Mitochondria, and Constipation

And let's say you take all those other things off the table, you go to your doctor and they say your thyroid is fine, your vitamin D, 25 hydroxy is fine, you know, all these other labs, your cholesterol, you're pregnant alone.

There is a hormone that is made in our hypothalamus, a part of the brain called melanocyte stimulating hormone or MSH. When it goes below 35, A lot of things can happen, but essentially our melatonin production falls.

And we need melatonin made by our body to go to sleep and to stay asleep because melatonin keeps our body cool. And so if you're struggling and you're getting 8 to 10 hours of sleep, you and this MSH is less than 35. You may have a condition called chronic inflammatory response syndrome.

Okay, so one of the questions that we wanted to talk about was blood sugar and blood sugar imbalances, which you kind of reference. Does that contribute to feeling exhaustion or just crashing through the day?

And what kind of tools can you use if that could be the cause? Yes, so blood sugar influences your fatigue during the day very, very much. So when you have an inability to pull sugar into your cells, many times people find themselves eating very frequently.

They have to eat like every two to three hours in order to keep their blood sugar up in their cells. So they think they

have hypoglycemia, but if they measured their blood sugar, it actually might be a little bit elevated because it won't go into the cells.

So that's called impaired autophagy. It's the ability to get sugar from the bloodstream into the cells. And if that's impaired, you can kind of know you've got that if you get really angry or irritated until you eat.

One of my children, they're an adult now, but every time they eat after a few minutes, they go, I love you. They get their hit of their glucose and then they feel good.

Otherwise, they're ravenous. They're like, get out of my way. I'm so hungry. I'm going to chew my arm off. Is there a way to test to see if that could be the cause?

Yeah, so there's an autophagy panel that Fagran offers. Also, you know, we always reference this, the Wellness Blueprint, but also we offer that because a lot of times that fatigue and that hangriness is tied in with ADD, ADHD, an inability to pay attention, inattentiveness, so that hangriness.

Non-Restorative Sleep and Chronic Inflammatory Response

that's on our neurological psychiatric panel. And then there's an immune autoimmune panel that also has a little bit of autophagy on there. But being able to, if you as a human being or you're observing your children, they have to eat every two to three hours or they get upset or grumpy.

The other is you can have your hemoglobin A1C checked. So, the hemoglobin A1c is a measure of the sugar attached to your red blood cells in your bloodstream over three years.

It's a very simple lab to test. And if that's where we like it to be is 4.8.2. And if it's greater than that, you most likely have a little bit of impaired autophagy.

And if you don't measure that, you may find out that, hey, you're pre-diabetic or, you know, type 2 diabetic. So the question I have is, what are some red flags or indicators that would make you think that fatigue may actually be driven by something like infection or mold or environmental toxins?

Well, for infection, I would think about pain. Like, for example, right now, I have a tooth that's going to be extracted a week from Friday, and it died.

And I have had some chronic pain, and it needs to come out because it's this chronic infection. And it kind of comes back here to the back of my neck.

So pain is a lack of oxygen utilization, and it's telling you something.

Blood Sugar Imbalances and Autophagy

So that and so when that is tied to also tired to look for other symptoms and the way that those things would connect. Okay. If your body is trying to fight off infection, you're tired.

Okay. Cause it's been working really hard under the hood to lower the inflammation. Now, the second part of the question, Lauren, would you repeat what that was?

Yeah, I think so many times people feel tired, then they put their pain over here and then they put their sleep problems over there. They put all of this and they don't connect the dots.

So you just did this brilliant way of saying like, okay, you're experiencing, yes, you're tired, but like what else are you experiencing in pain? So the question I was saying is like the red flags that may make you think that it's more than just a sleep issue, more than just a lifestyle issue, but that it could actually be driven by infection or the other things being mold or environmental toxins.

Okay. So, I would say that some big red flags, I would say, for children of any age are the inattentiveness, fatigue that's not like other kids. Let's say you take your three-year-old to the park and all the other little ones are running around.

After a couple minutes, your three-year-old has to sit down. Or, you know, your five-year-old, you know, everybody's running around like little banshees and your five-year-old has to sit down.

Got it. Waking up between two to three in the morning, that's a sign that that master control hormone called melanocyte stimulating hormone is low. Headaches that aren't by any other cause, abdominal pain, and you've ruled out other causes like chronic constipation.

Okay. Aches and pains that persist longer than a month or two, these are kids. Now for adults, those things I name too, but if you take your brain fog, your fatigue, and you put it together with abdominal pain, chronic constipation, or diarrhea, tremors, like you feel shaky a lot, you have headaches like migraines, weird pain, pain like ice pick pain, thunderbolt pain, and it's not related to anything you did, you know, that you know of.

Why are you having the stabbing pain in your thigh or your calf? Right. Cramps of your feet and cramps of your hands that curl like this. Yeah, like little C's.

Another thing that could point to this biological toxin or mold illness is static shocks.

Infection, Mold, and Environmental Red Flags

You're walking through your house and you're getting static shocks all the time. And that has to do with some hormones in the brain and brain chemistry.

But the fatigue is the big presenting thing. And so, you know, you find yourself going to different subspecialists. You go to somebody for your diarrhea or your chronic constipation.

The other is anxiety or depression or panic attacks. because when your endorphins go low, you're tired, you can't sleep well, you've got headaches, and that fatigue and that brain fog can be related to what's happening in your brain and your body from that toxin exposure.

Okay, I really love that because you really did just bring in the difference between conventional and functional medicine, which is conventional medicine would send you everywhere where we're saying, well, let's look at all of this at once and start to connect those dots and how they can work together and how they could be really speaking to one condition versus all of these other things that they'd be sending you to.

So lastly, for someone who's feeling discouraged or stuck in fatigue, what are just some practical tips or where can they start and maybe just kind of go over and putting everything that we've really discussed into like a few simple statements?

know, that's the thing we all need a shot of hope and just something that can help us. So, so much of this is within your power. That's a theme that we talk about.

You know, you have a lot of power in your kitchen and you can hydrate yourself and you can move your body. And you can set yourself up for success with your sleep, too.

And then the quality of the snacks and the food that you give yourself, like having nuts and seeds and grass-fed beef sticks. We call those chomp bars and things like that.

Feeding yourself those kind of things frequently instead of going for sugar and things like at Starbucks. Taking care of the lifestyle modifications are within your powers.

So hydration, good sleep habits, moving your body, feeding yourself quality food and from the rainbow. These

seem like such basic things, but those are the foundation and that really helps with fatigue.

And then If you go to your doctor and you go through and you ask for these basic tests, like a complete thyroid panel, even looking for antibodies against your thyroid, like a complete thyroid panel, vitamin D, your cholesterol, a hemoglobin A1C for fatigue, we also look at vitamin B12 and iron.

I mean, if you're anemic, then you can't carry oxygen and nothing works. We mentioned that prognetolum, but you got to go back to the very, very basics.

You know, can't be anemic, okay? Absolutely.

Practical Steps and Next Testing

Then if all those things are taken off your plate and you also potentially look around your home, you need to find someone who is proficient in chronic inflammatory response syndrome.

That is something that I've been trained in and I'm called a proficiency partner, but all of the medical providers that are practice, practice this type of medicine and we're thinking about that.

So making sure your home is clean and that's not necessarily, it's not with spore trap testing. So it's like you want to ask, If someone evaluates a home, if they know what chronic inflammatory response syndrome is, and that is something to look at.

And then of course, we talked about the whole genetic piece because, you know, again, it's a big window. So people can do that and they can do that anywhere internationally with our practice to order the blueprint and we can partner with you and help you with your fatigue.

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We'll see you soon.